REMARKS

Claims 1, 2, 6-19, and 28-42 are pending and all claims were rejected in a non-final office action mailed on April 19, 2004.

By this amendment, claims 1, 2, 6, 7, 9-19, 28, 30-32, and 34-42 are pending. Claims 8, 29 and 33 are cancelled. Claims 1, 6, 28, 29-32, 34 and 35 have been amended.

Claim 1 is amended to recite a peroxide sensitive enzyme particle stabilized for addition to a composition containing peroxygen bleach, the particle comprising a core selected from clays, nonpareils, agglomerated potato starch, seed crystals, inorganic salt or sugar; and a layer surrounding the core, the layer comprising a peroxide-sensitive enzyme component and about 10-350 U/g of a hydrogen-peroxide:hydrogen-peroxide-reductase, wherein the particle exhibits enhanced accelerated storage stability as compared to the stability of a similar particle without reductase.

Dependent claim 6 is amended for clarity and not for the purpose of patentability. The process language "is mixed together with" is changed to "the layer is a mixture of". Dependent claims 31, 32, 34, 35 and 42 are amended to provide dependency from original Claim 19. Claim 28 is amended to recite that the core is a material selected from clay, nonpareils, agglomerated potato starch, inorganic salts, sugar, and seed crystals.

No new matter is added by this amendment as all added terms are substantially found in the specification, including the original claims or the previously added claims.

37 CFR §112 REJECTIONS

Claim 8 has been cancelled thereby obviating this objection. Claim 28 has been amended thereby obviating this objection.

RESTRICTION REQUIREMENT ELECTION

Applicants hereby confirm election, without traverse, of Group 1 claims 1, 2, 6-19, 28-42, and withdrawal of claims 20-27 without prejudice.

37 CFR §103 REJECTIONS

The Examiner maintained the previous rejection of all claims as obvious over Herrmann et al. (US 6,248,706). In response to Applicant's argument that Herrmann et al. do not teach the combination of an oxidoreductase at a concentration of about 10-350 U/g of particle, the Examiner admits that "The prior art does not teach the specific concentrations of the reductase catalase in baker units as recited by the instant claims". The Examiner then states that, "However, Herrmann et al. provide motivation to modify the concentration of the enzyme that is used in the preparation of the enzyme granulate, dependent on the individual specific enzyme activity and the desired final activity of the enzyme granulate. See col. 7, ln. 15-20".

Applicants submit that the language cited by the Examiner is only a very general teaching that, if applied to a selection of catalase from the number of enzymes mentioned by Herrmann et al. might motivate someone skilled in the art to select a concentration of catalase to accomplish desizing of textiles (Col. 7, line 11). Certainly nothing in Herrmann et al. suggests or teaches the use of catalase, or any other enzyme, to stabilize another enzyme. Therefore Herrmann et al. is devoid of any teaching on concentrations of enzyme needed to stabilize other enzymes. Accordingly, there is no motivation to use an enzyme to stabilize another enzyme, particularly in view of Herrmann et al. teaching of only non-enzyme stabilizers (Please see Col. 7, lines 61-67, stating that customary enzyme stabilizers can be used, and listing "sodium benzoate, calcium salts, nonreducing mono-, di-, and trisaccharides, parabens, potassium and sodium sorbate, and common salts". These teachings of Herrmann et al. cannot possibly lead one skilled in the art to an oxidoreductase at a concentration of about 10-350 U/g of particle because (1) such a concentration would not likely accomplish desizing of textiles taught by Herrmann et al., and (2) because there is no teaching in Herrmann et.al. to use an oxidoreductase to stabilize another enzyme, in which case a stabilization concentration would need to be found. Applicants must unmistakably conclude that the Examiner is engaging in an impermissible hindsight reconstruction of Applicants' invention from Herrmann et al.

Furthermore, Herrmann et al. teach the use of one or more enzymes mixed in a granulation process only for use in the enzyme/flour containing core. The only teaching regarding the coating or "varnish" in Herrmann states that "an additional enzyme" may

be in the coating and there is no mention of mixtures. Certainly there is no teaching or suggestion that the coating of Herrmann et al. can contain, as in Claim 1, "(1) a peroxide-sensitive enzyme component and (2) a hydrogen-peroxide:hydrogen-peroxide-reductase, the reductase at a concentration of about 10 U/g to about 350 U/g of the particle".

The Examiner does not appear to be considering Applicants' claims as a whole, specifically. Applicants' claim 1, which recites "...the particle comprising a core selected from clays, nonpareils, agglomerated potato starch, seed crystals, inorganic salt or sugar; and a layer surrounding the core, the layer comprising (1) a peroxide-sensitive enzyme component and (2) a hydrogen-peroxide:hydrogen-peroxide-reductase, the reductase at a concentration of about 10 U/g to about 350 U/g of the particle...", as opposed to the flour/enzyme core of Herrmann et al and the varnish of Herrmann et al. which typically is recited as titanium dioxide, calcium carbonate, polyethylene glycol 4000, polyethylene glycol 200 (See Example 2, Col 13), with only a general suggestion that "an enzyme" , not a mixture of enzymes, might be included in the varnish.

The Examiner states that Herrmann et al. does not teach away from the use of seed cores, a premise that is not accepted by Applicants in view of the following language: "avoids the disadvantages of the methods used in the state of the art, e.g., extrusion methods or structural varnishing on seed cores of sugar or salts". (Col. 10, lines 62-64). The Examiner concludes that, based on this language, "one skilled in the art would have been apprised of the knowledge to utilize seed cores or enzyme flour mixtures in a method of formulating an enzyme granulate". However, even if one following the teachings of Herrmann et al. were to use a seed particle, a proposition unlikely in view of the teaching, that skilled person would still prepare the flour enzyme mixture taught by Herrmann et al and that mixture would not be a layer of (1) a peroxide-sensitive enzyme component and (2) a hydrogen-peroxide:hydrogen-peroxide-reductase, the reductase at a concentration of about 10 U/g to about 350 U/g of the particle, as discussed above. It would be hindsight reconstruction to first of all select a seed particle and then select Applicants' particular combination of enzymes, and last, select enzyme concentrations designed to allow one of the enzymes to protect the other enzyme.

The Examiner states that Applicants' combination of an oxidoreductase and an active agent in the presence of a bleaching compound are not recited in the rejected

claims, however, this is not a true statement, and the Examiner is referred to original Claim 19 and dependent claims 30-32, 34, 35 and 42.

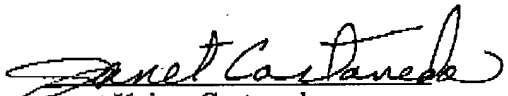
The Examiner further has rejected all claims as obvious over Novo Nordisk RD 35346A publication, stating that the publication provides "motivation to coat a sucrose core with a catalase in the analogous process of formulating a stable enzyme granulate". However, such a coating is not a layer of (1) a peroxide-sensitive enzyme component and (2) a hydrogen-peroxide:hydrogen-peroxide-reductase, the reductase at a concentration of about 10 U/g to about 350 U/g of the particle. RD35346A teaches a great many enzyme carrier pairs, but does not teach even one enzyme combination. Additionally, the examiner admits that RD35346 "is silent about the concentration of the catalase as recited by the instant claims". Furthermore, RD35346 teaches the use of a salt free carrier, and Applicants' claim 1 specifically states that the core material can be a salt. The rejection based upon this reference should be withdrawn.

The Examiner has required amendment of the specification to recite published material instead of PCT US 00/27888 and PCT 92/00384. An amendment to the specification is submitted herewith.

Applicants submit that the claims are in condition for allowance with is respectfully requested. The Examiner is invited to telephone the undersigned if it is believed that such a call will hasten allowance.

Dated: October 19, 2004

Respectfully submitted,



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COMPLETE LISTING OF THE CLAIMS

1. (Currently amended) A peroxide sensitive enzyme particle stabilized for addition to a composition containing peroxygen bleach, the particle comprising a core ~~made of~~ selected from ~~an~~ clays, nonpareils, agglomerated potato starch, seed crystals, inorganic salt or sugar; and a layer surrounding the core, the layer comprising (1) a peroxide-sensitive enzyme component and (2) a hydrogen-peroxide:hydrogen-peroxide-reductase, the reductase at a concentration of about 10 U/g to about 350 U/g of the particle, the particle exhibiting enhanced accelerated storage stability in a detergent base containing peroxygen bleach as compared to an accelerated storage stability of a similar particle without the addition of the hydrogen-peroxide:hydrogen-peroxide reductase.
2. (Previously presented) The particle of claim 1 wherein the enzyme component is selected from a protease, an amylase, a cellulase, or a lipase.
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Currently amended) The particle of claim 1 wherein the layer is a mixture of the hydrogen-peroxide:hydrogen-peroxide-reductase ~~is mixed together with~~ and the peroxide-sensitive enzyme component.
7. (Previously presented) The particle of claim 1 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is coated over the peroxide-sensitive enzyme component.
8. (Cancelled)
9. (Previously presented) The particle of claim 1 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is present at a concentration between about 20 U/g and about 200 U/g of particle.
10. (Previously presented) The particle of claim 1 wherein the hydrogen-peroxide-reductase is present at a concentration of about 10- 100 U/g of particle.

11. (Original) The particle of claim 1 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is present at a concentration of about 10-200 U/ gram of particle.
12. (Original) The particle of claim 1 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is present at a concentration of about 15-150 U/g gram of particle.
13. (Original) The particle of claim 1 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is present at a concentration of about 20-100 U/ gram of particle.
14. (Original) The particle of claim 1 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is present at a concentration of about 60-100 U/gram of particle.
15. (Original) The particle of claim 1 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is a naturally occurring catalase.
16. (Original) The particle of claim 1 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is an engineered catalase.
17. (Original) The particle of claim 1 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is a catalase derived from *Aspergillus niger*.
18. (Original) The particle of claim 1 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is a catalase derived from a *Micrococcus species* of bacteria.
19. (Original) A detergent with peroxygen bleach, such as perborate or percarbonate, including the particle of claim 1.
20. (Withdrawn) A method of stabilizing ~~an~~ peroxide sensitive enzyme component in a peroxygen bleach environment, the method comprising: providing a core; forming a granule by coating the core with the peroxide sensitive enzyme component and a hydrogen-peroxide:hydrogen-peroxide-reductase, the reductase at a concentration of about 10 U/g to about 350 U/g of the granule, the granule with the peroxide sensitive enzyme component exhibiting enhanced accelerated storage stability in a bleach containing detergent as compared to an accelerated storage stability a similar granule without addition of the hydrogen-peroxide:hydrogen-peroxide reductase .

21. (Withdrawn) The method of claim 20 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is a catalase that is mixed together with the peroxide sensitive enzyme component.

22. (Withdrawn) The method of claim 20 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is a catalase that is added to surround the peroxide sensitive enzyme component.

23. (Withdrawn) The method of claim 20 wherein about 10-200 U of a catalase hydrogen-peroxide:hydrogen-peroxide-reductase is added per gram of the granule.

24. (Withdrawn) The method of claim 20 wherein about 15-150 U of a catalase hydrogen-peroxide:hydrogen-peroxide-reductase is added per gram of the granule.

25. (Withdrawn) The method of claim 20 wherein about 20-100 U of a catalase hydrogen-peroxide:hydrogen-peroxide-reductase is added per gram of the granule.

26. (Withdrawn) The method of claim 20 wherein about 60-100 U of a catalase hydrogen-peroxide:hydrogen-peroxide-reductase is added per gram of the granule.

27. (Withdrawn) The method of claim 20 wherein about 40 to about 350 U of a catalase hydrogen-peroxide:hydrogen-peroxide-reductase is added per gram of the granule.

28. (Currently amended) An enzyme particle for use in compositions containing peroxygen bleach, the particle comprising:

a core consisting of one or more materials selected from clays, nonpareils, agglomerated potato starch, inorganic salts, sugars, and seed crystals;

an enzyme layer surrounding the core, the layer comprising (1) a peroxide-sensitive enzyme component and (2) a hydrogen-peroxide:hydrogen-peroxide-reductase at a concentration per particle of 10 U/g to 350 U/g of particle.

29. (Canceled).

30. (Currently amended) The detergent ~~particle~~ of claim ~~28~~ 19 further comprising a barrier material surrounding the layer.

31. (Currently amended) The ~~particle~~ detergent of claim ~~28~~ 19 further comprising an outer coating surrounding the layer.

32. (Currently amended) The ~~granule~~ detergent of claim ~~28~~ 19 wherein the peroxide-sensitive enzyme component is selected from a protease, an amylase, a cellulase, or a lipase.

33. (Canceled)

34. (Currently amended) The ~~particle~~ detergent of claim ~~28~~ 19 wherein the layer is a mixture of the hydrogen-peroxide:hydrogen-peroxide-reductase ~~is added to and mixed together with~~ and the peroxide-sensitive enzyme component.

35. (Currently amended) The ~~particle~~ detergent of claim ~~28~~ 19 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is coated over the peroxide-sensitive enzyme component.

36. (Previously presented) The particle of claim 1 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is present at a concentration of about 20-100 U/g of particle.

37. (Previously presented) The particle of claim 31 wherein the hydrogen-peroxide-reductase is present at a concentration of about 60-100 U/g of particle.

38. (Previously presented) The particle of claim 31 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is present at a concentration of about 10-200 U/ gram of particle.

39. (Previously presented) The particle of claim 31 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is present at a concentration of about 15-150 U/g gram of particle.

40. (Previously presented) The particle of claim 31 wherein the hydrogen-peroxide:hydrogen-peroxide-reductase is present at a concentration of about 40-310 U/ gram of particle.

41. (Previously presented) The granule of claim 32 exhibiting enhanced accelerated storage stability as compared to a similar granule without the hydrogen-peroxide:hydrogen-peroxide-reductase.

42. (Previously presented) The detergent of claim 19 wherein active oxygen percentage is not significantly reduced by the hydrogen-peroxide:hydrogen-peroxide-reductase as measured in a wash performance test.